The Effect of Green Transformational Leadership on Employees' Green Behaviors: Mediating Role of Green Human Resources Management and Moderating Role of Employees' Green Values

Ahmed Erfan Eltobgy[1] **Yasmeen Abd Elmoaty Attia**[2]

[1]Higher Institute of Tourism and Hotels, E.G.O.T.H, Ismailia, Egypt
[2]Faculty of Hotel and Tourism Services Technology,
East Port Said University of Technology, Egypt

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Abstract

Awareness of the environment and environmental ethical behaviors are increasing day by day in the travel and tourism sector. Different concepts are examined from the green point of view. This research examines the impact of green transformational leadership GTL on employees' green behaviors EGB with the mediating role of green Human Resource Management GHRM practices and the moderating role of employee green values EGVs. Hypothesized relationships were tested through a sample of 250 employees in EGYPTAIR Training Academy, and structured equation modeling (PLS-SEM) was conducted to analyze the obtained data. Findings reflected a significant impact of green transformational leadership GTL on both in-role and extra-role employees' green behaviors. Besides, green human resource management practices mediated the relationship between the green transformational leadership and both types of green behaviors. Furthermore, it was observed that the individual green values as a moderator variable, strengthened the association between green human resource management and both types of green behaviors. Research findings assure that the adoption of these green strategies will empower Egypt Air Training Academy to enhance its sustainability initiatives and establish itself as a benchmark for other entities.

Introduction:

Environmental concerns and the adoption of sustainable practices by organizations have garnered significant attention in recent decades due to the combination of destructive pollution and global warming, which has increased the need for environmental protection (Yong et al., 2020; Aboramadan and Karatepe, 2021; Abualigah et al., 2022; Mauledy, 2023). Organizations are encouraged to escalate their change to more environmentally friendly management

practices by the increasing environmental consciousness directed by customers, market pressure, legislation, and governmental restrictions (Li et al., 2020; Alhawari et al., 2021; Rashid et al., 2023). Stakeholders like customers and employees have recently demanded that their organizations take environmental responsibility seriously (Rashid et al., 2023). Consequently, environmental practices and sustainability have obtained dominant concern in business, particularly in the rapidly expanding travel and tourism sector. According to Agrawal and Pradhan (2023), researchers have illustrated that in order to meet customer demands and enhance environmental services, creative environmental approaches are required. In light of this, organizations involved in the tourism industry are more driven to implement environmentally friendly practices to produce sustainable outcomes. In order to transition from their conventional business models to environmentally friendly ones, tourism organizations are now adopting various initiatives and strategies (Hameed et al., 2022). Green Transformational Leadership (GTL) is one of these strategies which has been embraced by numerous organizations to foster sustainability. According to Wahba et al. (2024), GTL is the combination of leaders' inspirational and encouraging behaviors that guide and motivate their subordinates to surpass conventional environmental performance standards while exceeding ecological goals achievements. Beyond merely promoting green policies, GTL enhances an attitude of environmental responsibility that influences the members of the work force behaviors and alters them into more environmentally conscious citizens (Cahyadi et al., 2022). Accordingly, numerous studies have identified the direct crucial role of GTL on employee green performance and behaviors (Johnson and Schaltegger, 2020; Alwakid et al., 2021; Mauledy, 2023).

Green Human Resource Management GHRM is another eco-friendly strategy, which can be characterized as, the sustainable and ecologically conscious management of human resources. By utilizing techniques including recruiting and selection, training and development, performance-based rewards, and employee empowerment, GHRM may assist organizations in attracting, developing, motivating, and retaining exceptional members of the organization work force. (Mouledy, 2023; Elshaer et al., 2023). GHRM can be defined also as HRM initiatives and policies that enhance business continuity and work to mitigate the effects of an organization's environmentally harmful operations (Robertson and Carleton, 2018; Ren et al., 2020). GHRM concerns about helping organizations to accomplish, generate, motivate, and encourage environmentally responsible employees' behaviors (Dumont et al., 2017).

Prior research related GHRM to organizations environmental performance (Shen et al.,2018). Some literature associated GHRM to effective employees' performance and outcomes (Kim et al., 2019), and delineated that GHRM and other environmentally organizational approaches can also raise job satisfaction, particularly when they match the values of the employees (Pinzone et al., 2019; Elshaer et al., 2023).

However, the majority of research focuses primarily on the direct relationship between GTL and GHRM, and how GHRM improves the environmental performance of organizations. Notable researches have taken into consideration its mediating role in enhancing employees' Green Behavior EGB, with the crucial role of Employee Green Value EGV (Ren et al., 2018).

EGB's are defined by researchers as ascendable employee behaviors and activities that are associated to the environmental sustainability. EGB's encompass a collection of environmentally behaviors such as energy conservation, resource efficiency, waste avoidance, and prioritizing environmental interests (Cahyadi et al., 2022). On the other hand, EGV are defined by some academics as an important variable that may contribute in explaining employee's behaviours and attitudes (Lathabhavan and Bharti, 2024).

Accordingly, there is a gap in the literature that has to be filled in order to identify the social and psychological mechanisms that connect green transformational leadership GTL to employees' green behaviors EGB through the mediating role of green Human Resource Management GHRM practices and the moderating role of employee green values EGV, particularly in travel and tourism sector. Therefore, it is imperative to carry out an empirical study specifically targeting organizations that are significant related to the travel and tourist industry, as this could offer a deeper comprehension of the relationship between green transformational leadership GTL and employees' green behaviors EGB.

Based on the above, the current study aims to close the gap in the literature by investigating the relationships between GTL, GHRM, EGB, EGV in EGYPTAIR Training Academy, which is regarded as a business unit of the EGYPTAIR Holding

The Academy offers different training services related to travel and tourism aspects for individuals in Egypt and beyond. In addition to flight crew, cabin crew, and technical training, EgyptAir Training Academy also offers training and development for ground services, cargo, finance, commercial, and administrative activities—pretty much everything required in a contemporary airline.

The reason of choosing this Academy is that it is considered one of the main organizations related to the travel and tourism sector in Egypt, and has a great concern about applying sustainable and eco-friendly strategies. EGYPTAIR Training Academy Code of Ethics assured that the academy is dedicated to long-term objectives such as creating a sustainable business and to ongoing improvements in the management of the environmental impact. The EGYPTAIR Training Academy collaborates with other organizations to spread best practices, raise awareness of environmental challenges, and encourage environmental care (EgyptAir Training Academy, 2024).

Literature Review and Hypotheses Development

Green Transformational Leadership and Employee Green Behaviors

Green Transformational Leadership (GTL) refers to the actions of leaders who motivate and inspire their work teams to do better environmentally than is expected of them. Green visions, strategies, objectives, goals, and ideas are how green transformational leaders impact their workforce members (Cahyadi et al., 2022).

There are four main components to GTL: Green intellectual stimulation: To innovate green solutions and increase the effectiveness of environmental problem-solving, leaders should encourage work force members to think critically and creatively about environmental concerns (Abou Raia et al., 2023). Green individual consideration: Allows leaders to support the

environmental concerns of their subordinates and inspire them to lend their expertise and viewpoints to sustainability initiatives (Wahba et al., 2024). Green Charisma: Environmentally conscious leaders have the ability to arouse comparable emotions in their subordinates (songmenoglu et al., 2021). Green Motivation: By deploying it, leaders can successfully ignite employees' innate enthusiasm for the environment and promote environmentally friendly behaviors (Abou Raia et al., 2023).

In the 1960s, researchers' contemplations on environmental issues gave rise to the idea of EGBs (Omarova and Joo, 2022). EGBs are defined by some academics as scalable employee behaviors and actions that are related to environmental sustainability and either enhance or diminish it. Employees' pro-environment behaviors are also reflected in EGBs. The term "environmentally friendly behavior" (EGB) describes a collection of individual eco-friendly behaviors such as energy conservation, resource efficiency, waste avoidance, and prioritizing environmental interests (Cahyadi et al., 2022).

In-role green behaviors, or IRGBs, and extra-role green behaviors, or ERGBs, are two dimensions of EGBs. The performance of employees within the organization, including adherence to its policies, procedures and norms, is known as IRGB. Conversely, employees are not always compelled to follow ERGB when carrying out their duties (Agrawal and Pradhan, 2023).

IRGBs is considered the formal environmental management practices which involved the employee participation in a set of mandated tasks intended to carry out the organization's environmental policy. It can be controlled through a formal management system. For instance, staff members save energy in accordance with job descriptions, take part in recycling programs, and adjust production procedures in accordance with organization's pollution control policies (Tang et al., 2023). Formal job descriptions for employees typically include information on expected behaviors from the organization (Khan et al., 2021).

ERGB involves the informal proactive green behavior that focuses on employees' pro-environmental discretionary and unrewarded actions. It comprises pro-environmental creative idea generation, introduction of green innovations, and environmentally conscious corporate citizenship, which may include eco-initiatives, eco-civic participation, and eco-helping (Agrawal Pradhan, 2023).

Studies has demonstrated the impact of GTL on the behaviors of employees and the results of their jobs (Dumont et al., 2017; Hameed et al., 2020; Agrawal, 2020; Du and Yan, 2022; Agrawal and Pradhan, 2023). GTL have an impact on staff members by sharing their green ideas, strategies, objectives, and goals. According to Alswidi et al. (2021), GTL has a direct impact on EGBs. As a pioneer in fostering creative thinking among workforce members, GTL enables employees to think creatively and proposes environmentally responsible solutions for organizational challenges (Mauledy, 2023).

This stated relationship between GTL and EGB can also be explained through The Ability Motivation and Opportunities theory AMO. The goal of the AMO theory is to elucidate the traits that enhance individuals' productivity at work. A leader who embodies green transformation might encourage subordinates to adopt green practices by elevating their awareness of environmental matters. (Rasid et al., 2023). These arguments lead to the following hypothesis:

H1: *GTL positively affects EGB.*

The Mediating Role of Green Human Resource Management

Green Human Resource Management GHRM refers to policies and practices that foster eco-friendly ways of behaving among employees, and the sustainable consuming of organizational resources (Al-Ghazali and Afsar, 2020). GHRM practices focus on helping staff members to become more environmentally conscious and acquainted with how their ways of behave impact the environment (Malik et al., 2020; Cahyadi et al., 2022; Irani and Kilic 2022). GHRM procedures involve hiring, choosing, developing, motivating, and evaluating employees with an eye on achieving environmental objectives(Khan et al., 2021).

GHRM processes strategically create operational procedures to assist the organization's green performance. Organisations' primary focus lately is on environmental protection policies, which need to mesh with their corporate-level plans (Al-Ghazali and Afsar, 2020).

Milliman and Clair (2017) proposed a four-step GHRM framework including: (1) Senior executives need to have a vision for the environment. (2) HR executives have to trine individualsin accordance with organization's environmental objectives. (3) Eco-friendly behaviors must be taken into consideration while evaluating the performance of the employees. (4) Giving compensations to the employees with effectively participation in deploying the organizational green culture (Saeed et al., 2019).

There are few studies looking into how GHRM practices mediate the link between GTL and EGB. (Cahyadi et al., 2023). Several studies assure the positive link between GHRM practices and GTL, and that GTL plays a key role in supporting the formulation of GHRM practices (Jia et al., 2018; Singh et al., 2020; Arshad. 2021; Huelgas and Arellano, 2021; Mauledy, 2023).

Other studies identified that GHRM positively influences EGB (Kan et al., 2021; Karmoker et al., 2021; Ha and Uyen, 2021; Gill et al., 2021). Khan et al., (2021) reported that GHRM practices help employees become more environmentally conscious, improve their green skills and competences, recognise environmental issues, and embrace green behaviours.Moreover, The Suppliers-Values Fit (SVF) Theory, which contends that organization-offered supplies are assessed against the values of recipients (individuals), and that recipients feel fit when the supplies surpass values, can also serve as the foundation for the interaction between GHRM and EGB. (Hameed et al., 2020). These emotions could improve fit insights between individual and organizational goals (Khan et al., 2021). Regarding the previous explanation of S-V fit, this research assumes that GHRM practices are the supplies by adopting green and sustainable behaviors.

In the context of the relationship between GTL, GHRM practices and EGBs, researchers identify that GTL embodies thevalues and beliefs of senior executives and has a major effect on the GHRM of the organization. On the other hand, GHRM practices aimed at helping organizations acquiring GEBs in the workplace (Mauledy, 2023). Omarova and Jo (2022) elucidated that pro-environmental behaviour by employees is positively impacted by GTL, and this link is moderated by GHRM. Based on the above theoretical statements, which justify the GHRM as a mediator between relationship of GTL and EGB, researchers posit the following hypothesis:

H2: *GHRM positively mediates the correlation between GTL and EGB.*

The Moderating Role of Employee Green Values

According to Dumont et al. (2017), Hameed et al. (2020), Agrawal (2020), and Agrawal and Pradhan (2023), there is a correlation between Green Transformational Leadership GTL and Employee Green Behaviors EGB. This suggests that it is crucial to investigate how Employees' Green Values EGVs influence employee green behaviors. According to Alzghoul et al. (2018), EGV has a significant impact on employee attitudes and behaviors, helping to shape the work environment.
Despite of the previous studies, there is a dearth of evidence on the moderating function of EGVbetween GTL, GHRM and EGB (Dumont et al., 2017; Gilal et al., 2019; Al-Ghazali and Afsar, 2020). Nonetheless, other experts contend that the creation and generation of fresh concepts for the success of a business depend on the values held by its employees. The relationship between GHRM practices and environmental enthusiasm is likely to be strengthened by employees who hold more pro-environmental green beliefs (Gilal et al., 2019). According to Dumont et al., (2017), extra-role green behavior and a green psychological climate are more strongly correlated when green values are present.

Different researches explained that the effect of EGV's on attitudes and behaviors, can be described by the Value-Belief-Norm (VBN) and Supply-Value Fit (SVF) theories. These theories are often applied in the literature to explain how personal values impact an individual's behavior (Rashid et al., 2023).

The SVF theory hypothesis states that employee employment attitudes and behaviors will be positively impacted if their values align with those offered by the organization (Elshaer et al., 2023). The SVF theory is used by Al-Ghazali and Afsar (2020) to bolster the moderating function of EGV. They said that if an organization instills in its individuals' green environmental values via GHRM practices and these values in line with their own green values, employees will be more inclined to perform green behavior. According to the VBN Theory, an employee's norms, values, and beliefs influence the way they behave at work (Rashid et al., 2023).

Stated differently, the impact of GTL and GHRM activities on EGB would be amplified if the work force members believe that the organization's actions align with their values and beliefs. This will validate the study's proposed paradigm, hence the researchers hypothesized that:

H3: *EGV positively moderates the correlation between GTL and GHRM.*

H4: *EGV positively moderates the correlation between GTL and EGB.*

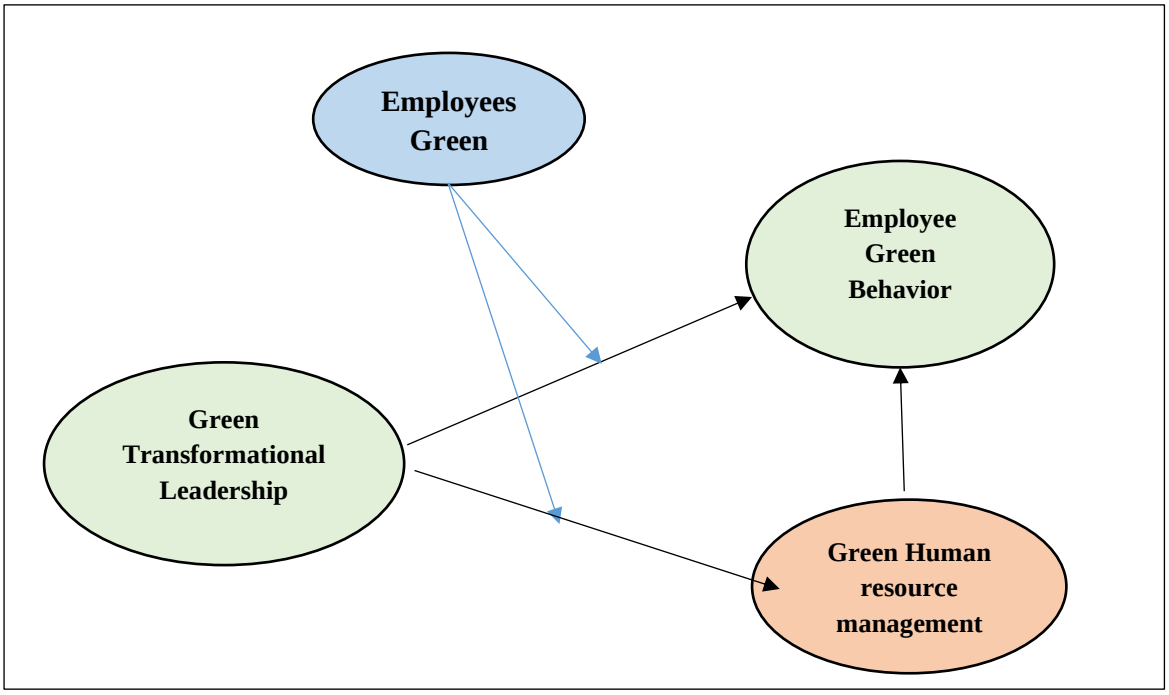

Figure 1: The proposed study model and Hypotheses

Methods

The Study Measurements

This study uses multiple items to examine the direct influence of GTL, the mediating role of GHRM practices, and the moderating role of EGV, in EGYPTAIR Training Academy. All items were obtained from related previous literatures. Table (1) shows the measures used in the questionnaire design which involves 4 variables GTL, EGB, GHRM, EGV. Each variable was defined by four dimensions. A five-point Likert type scale is accepted, in which the value of 5 indicates to "strongly agree" while the value of 1 indicates to "strongly disagree".

Table (1) Summery of measures in the conceptual framework

Construct	Measure Item	References
Green Transformational Leadership: GTL1: GTL2: GLT3: GLT4:	 My immediate manager's environmental plans serve as an inspiration to me. My direct supervisor has a distinct environmental perspective. I am motivated to meet environmental targets by my direct management. My direct management encourages me to consider environmentally friendly alternatives.	Cahyadi et al., (2022). Abou Raia et al., (2023)
Employee Green Behavior: EGB1: IRGB EGB2: IRGB EGB3: IRGB	 I carry out my responsibilities in an environmentally responsible manner. I carry out the duties outlined in my job description in an eco-friendly manner. I carry out the duties that are required of me in an environmentally responsible manner.	Lathabhavan and Bharti (2024)

Construct	Measure Item	References
EGB4: ERGB	I take the initiative to behave in a sustainable manner at work.	
EGB5: ERGB	Through my work, I spread my innovative, pro-environment views to others.	
EGB6: ERGB	I contribute more to the workplace environment than is required of me.	
Green Human Resource Management:		Al-Ghazali and Afsar, 2020
GHRM1:	The environmental aspects are included in the job description specification.	
GHRM2:	My company offers its staff training on environmental awareness.	
GHRM3:	Performance evaluations take into account an employee's involvement in environmental management.	
GHRM4:	Depending on their environmental accomplishments, employees might receive both monetary and non-monetary prizes.	
GHRM5:	To promote green projects, my organization has established helplines and communication channels.	
Employee Green Value:		Al-Ghazali and Afsar, 2020 Agrawal and Pradhan, 2023
EGV1:	I believe it is my personal duty to safeguard the environment in whatever way I can.	
EGV2:	I have a duty to preserve the environment, no matter what other people do.	
EGV3:	When I engage in environmentally unfavorable behavior, I feel bad.	
EGV4:	My own green beliefs align with the environmental values and cultures of my organization.	

Study population and Data Collection

The EGYPTAIR Training Academy employees in Cairo were the target population of the current study. A census method, based on the research aims and the characteristics of the limited population, was employed for the study. A census method is a statistical study that gathers information for every component or unit of the population.

Survey questionnaires were distributed from January to March 2024. Prior to the main survey, a pre-test was conducted to ensure the content, comprehensiveness, and clarity of the questionnaire. This evaluation involved a panel of specialists comprising nine managers from Egypt Air Training Academy. Recommendations from the pre-test included minor adjustments to language and terminology in order to improve the survey's respondents. Following these revisions, the questionnaire underwent a pilot test involving thirty employees to confirm the reliability of the measurement scale. Feedback from this pilot test led to some minor refinements being made.

The questionnaire was then administered to 250 employees in the different departments of the Academy with the assistance of HR department. Data regarding the total number of employees obtained from Academy employees statistical report (2024). The survey was directed to HRM in the academy to disseminate to the employees in different departments.

Data cleaning and review processes were carried out to address issues such as missing values, outliers, and data distribution normality. As a result, eighty submissions containing outliers, missing data, or unanswered questions were excluded. Subsequently, statistical analysis was conducted on a final dataset comprising 220 valid responses.

Descriptive Results:

Table (2) displayed the Characteristics of survey's respondents.

Table (2) Respondents' characteristics

Characteristics	Frequency	%
Gender		
Male	136	62
Female	84	38
Age		
20 - 30	23	11
31 - 40	66	30
41- 50	78	35
>50	53	24
Education		
High school	-	-
Bachelor	199	90
Master and above	21	10
Experience		
1-5 years	15	7
6-10 years	45	20
>10 years	160	73

It was made clear by the descriptive statistics that 38% of the intended respondents were female and 62% of responders were male. In terms of age, 11% of participants were between the ages of 20 and 30, 30% were between the ages of 31 and 40, 35% were between the ages of 41 and 50, and 24% were 51 years of age or over. According to the participants' disclosure of their educational background, 90% had obtained undergraduate degree, 10% held a master's degree or above, while 0% were employed with a high school certificate.

Data Analysis Techniques

Warp PLS 7.0 was used to do "Partial Least Squares" PLS and "Stuctured Equation Modeling" SEM in order to investigate the suggested theoretical ideas. PLS-SEM is a frequently used tool for data analysis in the literature on empirical tourism management (Al-Azab and Al-Romeedy, 2023). According to Manley et al. (2021) it is regarded as a suitable method for examining intricate structural models that have both direct and indirect relationships between multiple-item variables.

The three steps of the current research methodology—namely, the measurement model investigation, the structural model analysis, and the reliability and validity assessment—make up the data analysis process.

Table (3) Factorial validity, reliability, and convergent validity

Construct	Item	loading	A	CR	AVE
Green Transformational Leadership			0.816	0.879	0.803
	GTL1	0.863			
	GTL2	0.795			
	GTL3	0.762			
	GTL4	0.791			
Employees' Green Behavior			0.658	0.778	0.613
	EGB1	0.686			
	EGB2	0.711			
	EGB3	0.682			
	EGB4	0.631			
	EGB5	0.689			
	EGB6	0.624			
Green Human Resource management			0.731	0.824	0.697
	GHRM1	0.596			
	GHRM2	0.730			
	GHRM3	0.724			
	GHRM4	0.783			
	GHRM5	0.634			
Employees' Green value			0.825	0.884	0.810
	EGV1	0.815			
	EGV2	0.817			
	EGV3	0.782			
	EGV4	0.824			

Data Analysis Results

First, factorial validity testing was used to evaluate, interpret, and determine the significance of the measurement constructs. Promax rotation and the maximum likelihood approach were used in the exploratory factor analysis EFA. A factor loading of 0.5 was used for improved accuracy, in accordance with Hair et al. (2010), and factor extraction was predicated on a minimum eigenvalue of 1. The current investigation's item loadings, which varied from 0.596 to 0.863, were all calculated and found to be appropriate.

Considering every component of the theoretical framework was assessed using a variety of indicators, an internal consistency analysis was required. In order to evaluate the internal consistency of the eleven factors that were kept, as shown in table 3, the Cronbach's Alpha (α) coefficient was used. The coefficients indicate satisfactory results in the reliability evaluation of all elements, ranging from 0.658 for Employees' Green Behavior to 0.825 for Employees' Green Value.Following this, the previously indicated constructs—composite reliability CR, average variance extracted AVE, and factor loading of each indicator were examined for convergent validity. An AVE of 0.5 or higher was regarded as appropriate, and a construct reliability criterion of 0.7 was found acceptable (Shrestha, 2021).

The composite reliability for all variables was deemed sufficient, exceeding 0.7, with values ranging from 0.778 to 0.879, as shown in Table (3). Furthermore, the convergent validity of the scales was proven with AVE values exceeding 0.5, ranging from 0.613 to 0.810, in accordance with the set requirements by Hair et al., (2010).

Hair et al. (2019) explained that discriminant validity can be assessed using the Heterotrait-Monotrait Ratio (HTMT), cross loadings, and Forner-Lacker criterion. To show discriminant validity, an item's outer loading within a construct needs to be higher than the cross loadings of the same item in any other construct. The results confirmed the discriminant validity of latent variables because the outer loadings of each item inside the construct were bigger than the cross loadings of that same item in any other construct. By comparing every factor's square root of AVE with its association with another factor, the Fornell-Larcker criterion assesses discriminant validity. According to this criterion, the square root of AVE for each factor must be higher than the correlation it has with another latent. As shown in Table (4), the findings confirmed that the square root of AVE for every factor was higher than its association with other factors.

Table (4) correlation among constructs

	GTL	EGV	GHRM	EGB
GTL	0.803			
EGV	0.768	0.810		
GHRM	0.683	0.710	0.697	
EGB	0.669	0.745	0.682	0.613

In most study contexts, the Fornell and Larcker approach to discriminant validity validation is unreliable (Henseler, Ringle, & Sarstedt et al., 2015). The assessment of correlations heterotrait–monotrait ratio (HTMT) technique was established by Henseler et al. (2015) in order to find a dependable criterion for the validation of discriminant validity. The correlation between two latent variables is estimated using this method. Henseler et al. (2015) recommended that the HTMT limit value be 0.90. Any value that is higher than this cutoff point suggests that discriminant validity is lacking. Kline (2011) suggested using the HTMT-0.85 threshold value to validate discriminant validity. Table (5) demonstrates that our PLS model satisfies the HTMT requirements.

Table (5) Heterotrait-Monotrait (HTMT)

	GTL	EGV	GHRM	EGB
GTL	-			
EGV	0.636	-		
GHRM	0.787	0.718	-	
EGB	0.630	0.619	0.693	-

The second phase in the analysis method was to perform a confirmatory factor analysis. Research model quality and model fit indexes. Model fit was examined using a variety of model fit indices to assess how well the model fit the data prior to testing the hypotheses. Kock (2021) demonstrated that every model fit and quality index result satisfies the conditions listed in table (6).

Table (6) Model fit and quality indices

	Assessment	Criterion	Supported/ rejected
APC	0.316, P< 0.001	P < 0.05	supported
ARS	0.523, P< 0.001	P < 0.05	supported
AARS	0.507, P< 0.001	P < 0.05	supported
AVIF	1.344	< = 5 is accepted	supported
AFVIF	2.435	< = 5 is accepted	supported
GOF	0.570	≥ 0.36 = large, ≥ 0.25 = medium, ≥ 0.1 = small	supported

(SPR)	1.000	> 0.7 is accepted, 1 is Ideal	supported
(RSCR)	0.991	> 0.9 is accepted, 1 is Ideal	supported
(SSR)	1.000	> 0.7is accepted	supported

Table (7) Hypotheses reviewing

Hypotheses	B value	t-value	Effect size	sig	Result
H1. GTL ‣ EGB	0.21	6.001	0.409	P<0.01	supported
H2. GTL ‣ GHRM ‣ EGB	0.10	1.489	0.276	P<0.01	supported
H3. GTL*EGV ‣ GHRM	0.23	1.753	0.086	P<0.05	supported
H4. GTL*EGV ‣ EGB	0.21	1.593	0.057	P<0.05	supported

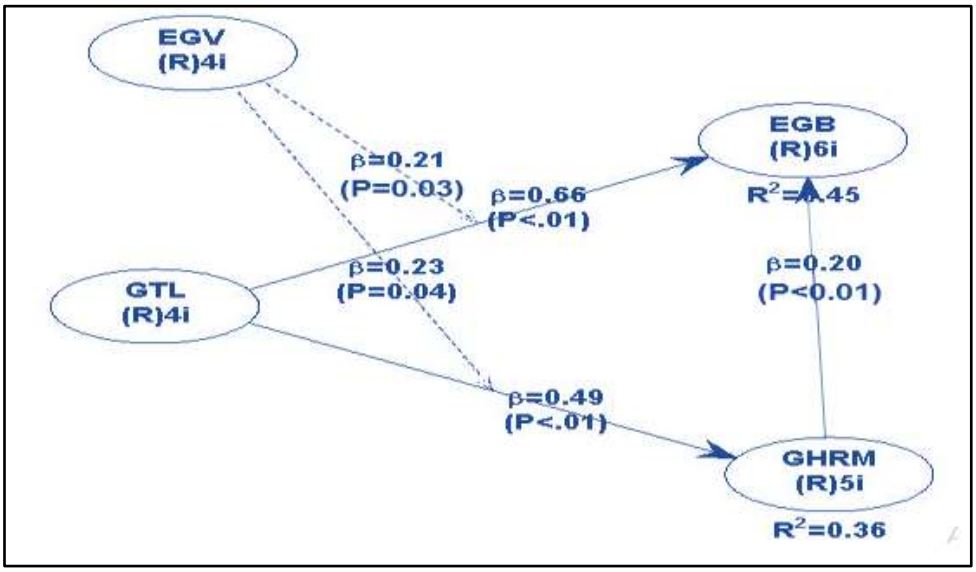

Figure: 2 The study model from PLS program

The study hypotheses were tested in the third step using SEM. The following hypotheses were measured: the direct effects between GTL and EGB H1, indirect effect between GTL and EGB through GHRM H2, and the impact OF EGV as moderator for the relationship between GTL and GHRMH3, as well as for the relationship between GTL and EGVH4.

Table (7) shows that there is a direct positive link between GTL and EGB, supporting H1, with β=0.66, t=6.001, p<0.01, demonstrating a positive and statistically significant impact of GTL on EGB. The study also looks at GHRM's function as a mediator between GTL and EGB H2. The findings verified that there was a positive correlation between GHRM and EGP as a mediator, with β=0.10 (0.49 x 0.20), t = 1.489, and p<0.01.Figure 2 illustrates a significant correlation between GHRM and EGB, with β=0.20 and P<0.01. The link between GTL and EGB is thus partially mediated by GHRM.

The impact of EGV as a moderator on the link between GTL and GHRM was shown to be statistically significant with a t=1.753 and an effect of β=0.23, p<0.05. Additionally, the data showed that the interaction of EGV with GTL and EGB had a statistically significant impact (β = 0.21, p<0.05) with a t = 1.593.

To do moderation analysis, the PLS product-indicator technique is used. Because PLS accounts for the inaccuracy that reduces the strength of the estimated associations, it provides moderator effect results that are relatively more accurate. WarpPLS7 automatically computed the interaction to test the moderating impact. To predict GHRM, the predictor GTL and the

moderator EGV were multiplied to form an interaction construct (GTL * EGV). We support the moderating impact of EGV on the positive link between GTL and GHRM, and we accept this hypothesis based on the study results EGB (β =.23; t = 1.753; p <.05) as presented in Table 7. The third hypothesis H3 suggests that the positive association between GTL and GHRM is moderated by an employee's green values. Furthermore, the moderation impact (GTL * EGV) on EGB (β =.21; t = 1.593; p <.05) shows that employee green values positively influence the positive association between GTL and EGB, supporting H4.

Furthermore, it can be concluded that GTL accounts for 45% of the variance in EGB based on the framework's total effect size or predictive accuracy (R^2) value of 0.45. (Figure 2), in the same direction, the (R^2) value (0.36) indicates that 36% of the variation in GTL is jointly contributed by GHRM and GTL. R^2 is regarded as weak at.26, moderate at.50, and significant at.75, according to Hair Jr et al. (2014). Researchers evaluated the specific effect sizes subsequent to the examination of the total effect size (R^2). The p-value does not indicate the size of an effect; rather, it indicates the significance of the link between the independent and dependent variables separately. Accordingly, it is necessary to present both statistical significance (p) and substantive significance impact sizes (Hair et al., 2019).

Mild, moderate, strong effects are represented by the effect sizes values, which are 0.02, 0.15, and 0.35, respectively (Cohen, 1988). The results presented in Table 7 show that the relationship between GTL and EGB has strong size effect, as well, the correlation between GTL and EGB via GHRM, while the least relationships have moderate size effect.

Discussion

This study aims to evaluate the direct link between GTL and EGB. Examine the mediation role of GHRM in the link between GTL and EGB. Moreover, this research presents EGV as moderating variable to examine its interaction on the positive correlation of GTL and GHRM, and also examine the interaction of EGV on the correlation between GTL and EGB. In order to accomplish the study's objectives, a quantitative technique is employed, and data from Egypt Air Training Academic.

The results emphasized the positive correlation between GTL and EGB. With Dumont et al., (2017); Hameed et al., (2020); Agrawal, (2020); and Agrawal and Pradhan, 2023, this resulted in a line that verified the positive correlation between GTL and employees' behavior. Additionally, Mittal and Dhar (2016) concurred with this outcome, pointing out that GTL might encourage individuals to act sustainably by heightening their awareness of environmental concerns.
Additionally, the results show that GTL and EGB are positively correlated due to GHRM. This led to the collaboration with Mauledy (2023), who showed how GHRM practices were intended to assist organizations in obtaining GEBs in the workplace. Additionally, Omarova and Jo (2022) clarify that GHRM moderates the positive link between GTL and employees' pro-environmental behavior.

As well, the findings show that EGV has a significant moderating impact on the link between GTL and EGV. These results are consistent with those of Alzghoul et al. (2018), who suggested that EGV has a significant impact on how the workplace is shaped and how employees behave. According to Elshaer et al. (2023), the Supply-Value Fit (SVF) theory states that when employee values align with those offered by the organization, this will positively improve individual job attitudes and behaviors. According to Rashid et al. (2023), the SVF and Value-Belief-Norm VBN Theories both provide evidence for the influence of individual values on conduct.

The results also showed that the link between GTL and GHRM is positively impacted by the moderating influence of EGV. This finding is consistent with the explanation provided by Gilal et al. (2019), who stated that employees who demonstrate a higher level of pro-environmental green values are likely to improve the relationship between GHRM practices and a strong enthusiasm for the environment. Additionally, Al-Ghazali and Afsar (2020) found that if an employee feels that the organization's actions align with his or her ideas and values, the impact of GTL and GHRM practices on EGB will be strengthened.

Conclusion

This study has explored the intricate dynamics between Green Transformational Leadership (GTL) and Employees' Green Behavior (EGB), elucidating the mediating role of Green Human Resource Management (GHRM) and the moderating influence of Employees' Green Values (EGV). Our results substantiate a positive relationship between GTL and EGB, aligning with prior research that underscores the significance of leadership in fostering environmentally conscious behaviors among employees. As a result, the study suggests supporting courses that help managers and supervisors develop green transformational leadership. This can be achieved via workshops, seminars, and ongoing education focused on environmental concerns and sustainable leadership techniques.

Additionally, the study emphasizes how crucial GHRM is to improving GTL's efficacy, as seen by its positive mediation impact. This emphasizes how crucial it is to put in place thorough HR procedures that support and encourage environmentally friendly behavior in workplace environments. As a result, we advise creating and putting into effect thorough GHRM policies that encourage environmentally friendly behavior. This includes eco-friendly hiring procedures, eco-friendly performance reviews that honor eco-friendly behavior, and eco-friendly staff development initiatives that promote environmental sustainability.

The moderating effect of EGV adds value to our understanding, demonstrating that the alignment of individual values with organizational practices can significantly bolster the effect of GTL and GHRM on EGB.The result holds significant importance for establishments seeking to foster a deeply embedded culture of sustainability, recommending that hiring and training procedures should prioritize the congruence of individual and group values. It is also necessary to set up key performance indicators (KPIs) in order to monitor the success of GHRM and GTL programs. Make necessary adjustments based on an ongoing evaluation of these practices' effects on individual's behavior and organizational sustainability goals.

The data were gathered from a sole entity, potentially constraining the applicability of the results. Subsequent studies may gain advantage from a broader sample encompassing various sectors and societal settings to authenticate and broaden these outcomes. Moreover, future researches could offer more profound understandings into the enduring impacts of GTL and GHRM on EGB.

In conclusion, our study emphasizes the essential significance of leadership and human resource strategies in encouraging environmentally conscious actions within organizational settings. Through cultivating a setting that harmonizes individual and organizational principles, leaders can proficiently motivate and maintain eco-friendly behaviors among staff members, thereby aiding in the advancement of overarching sustainability objectives. The adoption of these suggestions will empower Egypt Air Training Academy to enhance its sustainability initiatives and establish itself as a benchmark for other entities.

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أثر القيادة التحويلية الخضراء على السوك الأخضر للعاملين: الدور الوسيط لإدارة الموارد البشرية الخضراء، والدور المعدل لقيم العاملين الخضراء

أحمد عرفان الطوبجي[١] ياسمين عبد المعطي عطية[٢]

[١]المعهد العالي للسياحة والفنادق- إيجوث- الاسماعيلية- جمهورية مصر العربية
[٢]كلية تكنولوجيا الخدمات الفندقية والسياحة- جامعة شرق بورسعيد التكنولوجية- جمهورية مصر العربية

ملخص باللغة العربية

يتزايد الاهتمام بالموضوعات المتعلقةبالوعي بالبيئة والسلوكيات الأخلاقية البيئية يومًا بعد يوم في قطاع السفر والسياحة، حيث يتم تناول مختلف المفاهيم من وجهة نظر خضراء. لذا يهتم هذا البحث بتحديد أثر القيادةالتحويلية الخضراء على السلوكيات البيئية للعاملين في أكاديمية تدريب مصر للطيران. كما يفحص الدور الوسيط لممارسات إدارة الموارد البشرية الخضراء، والدور المعدل لقيم العامليناالخضراء. تم اختبار فروض الدراسة من خلال عينة بلغت ٢٥٠ من العاملين في الأكاديمية في مختلف الأقسام، وباستخدام أسلوب نمذجة المعادلات البنائية باستخدام المربعات الصغرى الجزئية.

أظهرت النتائج وجود تأثير معنوي لأبعاد القيادة التحويلية الخضراء على السلوكيات البيئية للعاملين سواءالأساسية أو الإضافية. هذا بالإضافة إلى أن ممارسات إدارة الموارد البشرية الخضراء تقوم بدور وسيط بين أبعاد القيادة التحويلية الخضراء والسلوكيات البيئية للعاملين.كما تعمل القيم البيئية الخضراءللعاملين على تعزيز العلاقة بين إدارة الموارد البشرية الخضراء والسلوكيات البيئية للعاملين. أكدت نتائج الدراسة أهمية تبني أكاديمية تدريب مصر للطيران لتلك الاستراتيجيات الخضراء، وذلك لتمكينها وتعزيز مبادرات الاستدامة بها، مما يجعلها نموذجًا يُحتذى به للمنظمات الأخرى.

الكلمات الدالة:القيادة التحويلية الخضراء – سلوك االعاملين الأخضر – إدارة الموارد البشرية الخضراء – قيم العاملين الخضراء